

Claims

1. A character recognition processing device, comprising:

an image fetching unit, which fetches image data of a character image as an object to be recognized, the character image being photographed for recognizing a character;

a cursor information output unit, which outputs cursor position information showing a position of a character frame for recognizing the character corresponded with the character image;

a layout analyzing unit, which collates the cursor position information with the fetched image data of the character image to analyze an arrangement of the character;

a character cutting unit, which extracts the character image on the basis of the analyzed result of the layout analyzing unit; and

a character recognizing unit, which recognizes the extracted character image as the character and converts the character image to character information.

2. The character recognition processing device according to claim 1, wherein when the character image as the object to be recognized is configured by a plurality of character images obtained by a continuous photographing operation, the image fetching unit fetches the image data of the character images respectively by a prescribed area from all of the character images; and

wherein the layout analyzing unit collates the cursor position information with each of the fetched image data of the plurality of character images to analyze the arrangement of the characters.

3. The character recognition processing device according to claim 1,
wherein when the character image as the object to be recognized is configured
by a plurality of character images obtained by a continuous photographing
5 operation, the image fetching unit fetches the image data of the character
images respectively by a prescribed area from all of the character images; and

wherein the layout analyzing unit collates the cursor position
information with the image data in which the plurality of fetched character
images are connected together to analyze the arrangement of the characters.

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4. A portable terminal device having the character recognition processing
device according to any one of claims 1 to 3.

5. A portable terminal device, comprising:

15 a photographing unit, which photographs a character image as an
object to be recognized for recognizing a character;

an image fetching unit, which fetches image data of the photographed
character image;

20 a cursor information output unit, which outputs cursor position
information showing the position of a character frame for recognizing the
character corresponded with the character image;

a layout analyzing unit, which collates the cursor position information
with the fetched image data of the character image to analyze the arrangement
of the character;

25 a character extracting unit, which extracts the character image on the

basis of the analyzed result of the layout analyzing unit; and

a character recognizing unit, which recognizes the extracted character image as the character and converts the character image to character information.

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6. The portable terminal device according to claim 5, further comprising a character frame display unit which displaying a character frame for recognizing the character so as to overlap on the character image upon photographing by the photographing unit.

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7. The portable terminal device according to claim 5, further comprising a recognized character display unit which displays the character information as a recognized result by the character recognizing unit.

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8. The portable terminal device according to claim 7, wherein the recognized character display unit individually selectively displays the character information as the recognized result by a prescribed character unit.

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9. The portable terminal device according to claim 5, further comprising a recognized character storing unit which stores the character information as the recognized result obtained by the character recognizing unit.

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10. The portable terminal device according to claim 9, wherein the recognized character storing unit stores the character information in a recognized character storing area.

11. The portable terminal device according to claim 9, wherein the recognized character storing unit registers the character information in a data base corresponding to a type of each character information when the type of the character information is any one of a telephone number, a mail address and a URL (Uniform Resource Location).

12. The portable terminal device according to claim 5, further comprising a recognized character utilizing unit which utilizes the character information as the recognized result obtained by the character recognizing unit in accordance with the type of the character information.

13. The portable terminal device according to claim 12, wherein when the type of the character information is the telephone number, the recognized character utilizing unit displays a transmitting screen to the telephone number.

14. The portable telephone terminal device according to claim 12, wherein when the type of the character information is the mail address, the recognized character utilizing unit displays a preparing screen for an electronic mail to the mail address.

15. The portable terminal device according to claim 12, wherein when the type of the character information is the URL (Uniform Resource Locator), the recognized character utilizing unit displays a network connecting screen to the URL.

16. The portable terminal device according to claim 5, wherein the photographing unit has a function for continuously photographing the character image as the object to be recognized;

5 wherein when a plurality of the character images as the objects to be recognized are obtained by the photographing unit, the image fetching unit fetches the image data of the plurality of character images that are connected together; and

wherein the character recognizing unit recognizes the characters of the
10 image data of the connected character images to convert the image data to the character information.

17. The portable terminal device according to claim 5, wherein the photographing unit has a function for continuously photographing the character
15 image as the object to be recognized;

wherein when a plurality of the character images as the objects to be recognized are obtained by the photographing unit, the image fetching unit fetches the image data of the plurality of character images; and

wherein the character recognizing unit recognizes the characters of the
20 image data respectively for the plurality of fetched character images to convert the image data to the character information.

18. The portable terminal device according to claim 5, wherein the character recognizing unit has a plurality of recognizing modes which is
25 corresponded with types of the characters as the objects to be recognized; and

wherein the character recognizing unit carries out a character recognizing process suitable for the corresponding type of the character in accordance with a preset recognizing mode.

- 5 19. A character recognition processing method comprising the steps of:
- photographing a character image as an object to be recognized while displaying the character image together with a character frame for recognizing a character;
- fetching the image data of the photographed character image;
- 10 outputting cursor position information showing the position of the character frame for recognizing the character corresponded with the character image;
- collating the cursor position information with the fetched image data of the character image to analyze the arrangement of the character;
- 15 extracting the character image on the basis of the analyzed result of the arrangement of the character; and
- recognizing the extracted character image as the character and converting the character image to character information.
- 20 20. A character recognition processing program in which the respective steps defined in claim 19 are executed by a computer.